What is claimed is:

1. A method for identifying location of an object to be tracked comprising;

measuring data related to propagation time differences between signals transmitted from a plurality of satellites and received at said object to be tracked;

transmitting said data to a central station; and

calculating at said central station the location of said object to be tracked based upon the transmitted data and data derived from at least one receiver apart from said object to be tracked receiving said signals from said plurality of satellites.

2. The method of claim 1 wherein the data transmitted to the central station includes satellite identification data so that the step of calculating the location of said object to be tracked is thereupon based further upon the satellite identification data.

3. The method of claim 2 wherein said plurality of satellites comprises at least four GPS satellites and said data related to propagation time differences comprises code word phase measurements simultaneously derived from the signals transmitted from said plurality of satellites and received at the object to be tracked.

4. The method of claim 2 wherein said plurality of satellites comprises at least four GPS satellites and said data related to propagation time differences comprises bit phase measurements simultaneously derived from the signals transmitted

from said plurality of satellites and received at the object to be tracked.

5. The method of claim 1 wherein the step of calculating the location of said object comprises calculating a point of intersection of curves defined by said propagation time differences.

6. The method of claim 1 wherein said data comprise receiver code-time offsets and code periods, said plurality of satellites comprising GPS satellites, and including the additional step of simultaneously deriving said receiver code-time offsets and code periods from signals received from the plurality of satellites at said object to be tracked.

7. The method of claim 5 and further including:

recording, at said object, the time at which the data are simultaneously derived; and

transmitting the recorded time to said central station.

8. The method of claim 5 and further including:

measuring, at said object to be tracked, delay between the time at which the data are recorded and the time when the data are transmitted to the central station; and

transmitting the measured delay to said central station.

9. The method of claim 8 including the additional steps of:

assuming a feasible value for a communication time delay required for a signal

transmitted from said object to be tracked to reach the central station;

calculating the location of said object to be tracked based upon the assumed value of said communication time delay;

calculating a new value for said communication time delay based upon the calculated location of said object to be tracked; and

calculating a corrected location of said object to be tracked based upon the calculated new value for said communication time delay.

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~~10~~. The method of claim ~~9~~ including the additional step of:

iteratively repeating the calculating steps until little change in location of said object to be tracked is observable.

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D ~~11~~. The method of claim ~~1~~ 2 including the step of transmitting time signals to said object to be tracked over a separate channel so as to maintain clock accuracy at said object to be tracked.

12. A system for identifying location of an object to be tracked, comprising;

means for measuring data related to propagation time differences between signals transmitted from a plurality of satellites and received at said object to be tracked, each of said signals identifying an associated satellite;

receiver means apart from said object for receiving said signals from said plurality of satellites;

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a central station for calculating the location of said object based upon the measured data,

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data derived from said receiver means apart from said object, and the satellite identification; and

means for transmitting said data related to propagation time differences along with associated satellite identification to said central station.

13. The system of claim 12 wherein said satellites are GPS satellites and wherein said object to be tracked includes:

receiver means located with by said object for receiving signals from at least four GPS satellites;

first processor means for processing data from the receiver means related to propagation time differences for said signals; and

transmission means for transmitting the processed data to said central station;

said system further including:

second processor means at said central station for determining the location of said object based on the data received from said transmission means and data derived from said receiver means apart from said object.

14. The system of claim 13 wherein said first processor means comprises means for processing said data at predetermined time intervals.

15. The system of claim 13 wherein said first processor means comprises means for processing said data at time intervals in synchronism with received signal events.

~~16~~ 14. The system of claim ~~15~~ 1, wherein said signal events comprise a telemetry-word preamble signal event in a GPS signal.

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~~17~~. The system of claim ~~16~~ wherein said first processor means further comprises means for decoding a satellite time stamp from a predetermined one of the received GPS signals, based upon the telemetry-word preamble signal event.

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18. The system of claim 12 wherein said satellites are GPS satellites and wherein said object to be tracked includes:

receiver means located with said object for receiving signals from at least four GPS satellites;

first processor means for calculating a receiver bit phase for each of said satellites based upon the signals received from said satellites, and

transmission means for transmitting the calculated bit phases to said central station;

said system further including:

second processor means at said central station for determining signal propagation times between said plurality of satellites and said object and for determining location of said object based upon the bit phases transmitted by said transmission means and data derived from said receiver means apart from said object.

19. The system of claim 12 wherein said satellites are GPS satellites and wherein said object to be tracked includes:

receiver means located with said object for receiving signals from at least four GPS satellites,

first processor means for calculating a bit-time offset for each of said satellites and for determining a bit period for each signal received from said satellites, and

transmission means for transmitting time stamps, the calculated bit-time offsets and bit periods, and satellite identification data to said central station;

said system further including:

second processor means at said central station for determining signal propagation times between said plurality of satellites and said object and for determining location of said object based upon the bit-time offsets and periods, time stamps, satellite identification data transmitted by said transmission means, and data derived from said receiver means apart from said object.

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